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226 789 forms. Near ahu Mahatua is a stone covered with engraved vulvas (*komari*), called Pu-o-Hiro (Trumpet-of-Hiro) because of a natural hole which can be blown through like a trumpet. Legend says that it stood formerly in Hanga-roa and was brought to its present place by a raiding party of Tupa-hotu warriors. The shaking of this stone brought shoals of fish to the shore.

ANGLING

FISHHOOKS

227 Modern natives catch most of their fish by hook. Angling (*hi ite ika*) must always have been important, judging from the abundance of fishhooks which may still be discovered in the caves by the shore. The ancient fishhooks were of stone or bone, the latter being either simple or complex.

Legend says that the natives of ancient times used the thorns of the *ngaoho* (*Caesalpinia bonduc*) for making hooks, but the thorns are too small to have been put to any practical purpose. Composite wooden hooks were made for trade by some natives who asserted that they were authentic reproductions of old specimens.

One-piece Hooks

227 324 [773] **Stone Hooks.** Stone hooks were always of the one-piece type, although the stone point of a fishhook (fig. 11, *a*) in the Bernice P. Bishop Museum collection seems to indicate that at least one element of composite fishhooks might have been of stone. According to an ancient myth, long ago the natives had only stone hooks, but the fish would never bite (*pakoo*) at them. Hook fishing proved successful only after the fishermen learned from Ure-a-vai-a-nuhe how to make fishhooks from the bones of the dead. (See p. 363). Had stone fishhooks been the valueless implements the myth indicates, the ancient fishermen would not have put so much work and time into their manufacture. The numerous unfinished stone fishhooks and fragments of finished specimens found on the island deny that they were exceptional and intended only for ceremonial purposes. The myth mentions the *kahi* (tuna) as the fish that could not be captured with stone hooks, but we may infer from the name of the stone hook, *mangai kahi* (215, p. 537), that it was made especially for catching the tuna. Either the name of the *kahi* has been introduced in the myth instead of that of some other fish that required a smaller bone hook, or the legend has arisen after the use of stone fishhooks was abandoned.

At the time of Palmer's visit in 1868, Easter Islanders no longer employed stone fishhooks, and perhaps had given up the use of bone hooks too, after becoming familiar with iron fishhooks. Palmer (171, p. 173) says: "They did not offer any fishing lines for sale, and the only hooks we saw

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were the large ones called *rou*, made of stone, and which were of some age, and scarce, about three inches across the head. They are not in use now."

Stone fishhooks[9] (*rou, mangai maea, mangai kahi*) are well represented in the collection of Bishop Museum by five whole specimens (fig. 7) and thirteen fragments. The pieces which illustrate the method of manufacture are particularly fine (fig. 8). During my stay on Easter Island I obtained only one stone hook with a broken point, and a number of fragments.

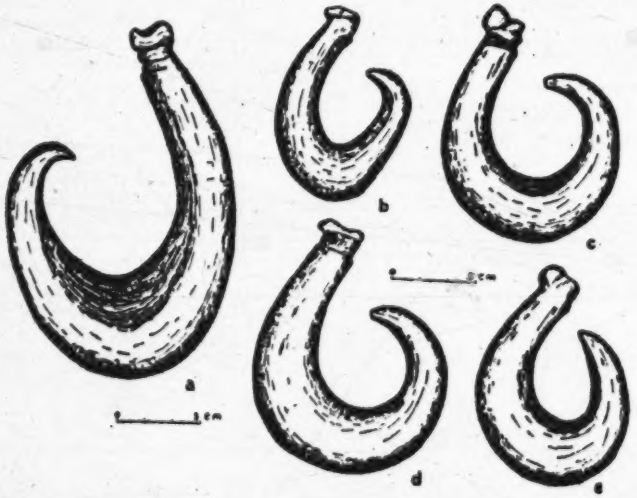

FIGURE 7.—One-piece stone fishhooks (B3540, measurements given in table 4): *a*, recess under knob 8 mm. wide with two notches on inner side to retain snood; *b*, knob projecting backward, oblique grooves on both sides to hold snood, recess under knob lined by small flange; *c*, knob divided by deep groove, posterior part projecting backward, anterior part with three distinct grooves; *d*, knob slightly concave on top (partly broken), well-marked recess under knob separated from shank by clear-cut flange; *e*, top of knob flat, posterior part polygonal, notching on back and front, no recess on sides.

[9] Easter Island stone fishhooks have been figured by Thomson (215, pl. 58, fig. 3), Beasley (14, pls. 89-91), Brown (27, pl. opposite p. 188, fig. 3), Shapiro (202), Chauvet (43, figs. 70-72), and Blasetberg (208, vol. 1, pl. 14, fig. 4).

Specimens of complete stone fishhooks are in the following museums and private collections: one in U. S. National Museum; one in the American Museum of Natural History; one in the Musée d'ethnographie du Trocadero; one complete specimen and many fragments in the Fuller collection, London; one in the collection of Dr. Stephen Chauvet, Paris; one in possession of J. Brown.

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TABLE 4. MEASUREMENTS OF STONE FISHHOOKS

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Hook illustrated	Material	Total length	Width[10]	Thickness	Width of bend	Clearance between point and shank
7,*a*	gray, close-grained basalt	130 mm.	84 mm.	16 mm.	39 mm.	33 mm.
7,*b*	gray, close-grained basalt	71 mm.	50 mm.	12 mm.	21 mm.	12 mm.
7,*c*	gray, close-grained basalt	86 mm.	70 mm.	13 mm.		14 mm.
7,*d*	soft, fine-grained, disintegrated basalt of reddish color	90 mm.	75 mm.	13 mm.	27 mm.	16 mm.
7,*e*	soft, fine-grained basalt, gray with reddish tinges	80 mm.	66 mm.	14 mm.	23 mm.	9 mm.

[10] Width measured from outer edge of shank to outer edge of point limb.

The first stage in the manufacture of a stone hook is the choice of suitable material. The piece of basalt must be not only close-grained and free from flaws but, as far as possible, of convenient form and thickness to obviate the labor of reducing an unwieldy mass. The second stage consists in giving the stone the general outline of a hook, by coarse chipping followed by grinding. When the bulk of the material has been reduced, sometimes even before, the stone within the inner curve is removed by drilling a large hole through the stone and then enlarging it by drilling other holes on the border of the first (fig. 8, *d*). The holes are generally drilled from one side and then broken through from the other side when the hole is near completion. Thus the perforation is larger than it would be if the hole had been pierced from one side only. Judging from the shallow, wide depressions left on specimens in the first stage of drilling, the tool used has a broad working end. It is probably a drill of the general Polynesian type: a spindle with some sort of flywheel turned with a cord. Sand mixed with water is undoubtedly the grinding agent. In the specimens at hand, the upper diameter of the hole is between 19 mm. and 25 mm., but these figures do not give the exact size of the drill bit, since the unsteady movements of the drill tend to enlarge the hole. An unfinished fishhook that I procured on Easter Island was fashioned by drilling a cluster of small holes in the center (fig. 8, *g*). Simultaneous drilling and grinding of the stone explain why some unfinished hooks have the outside edges so perfectly shaped and worked.

[401]

The pattern of the stone hooks is uniform throughout, the principal variations being in thickness at the bend and in the distance between the point and the shank. Most of the fishhooks have a continuous curve, but in one specimen (fig. 7, *b*) the limb from the bend to the point is almost straight. The shank is topped by a knob or projecting ridge with transverse grooves. A depression in the knob divides it into two unequal parts—one rounded, and the other small and sharp (fig. 7, *a*) which is generally toward the point. Below the ridge there is a recess, the inner margin of which is sometimes

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serrated. The knob so divided strongly resembles the outlines of birds' heads as represented on the tablets. 227 324

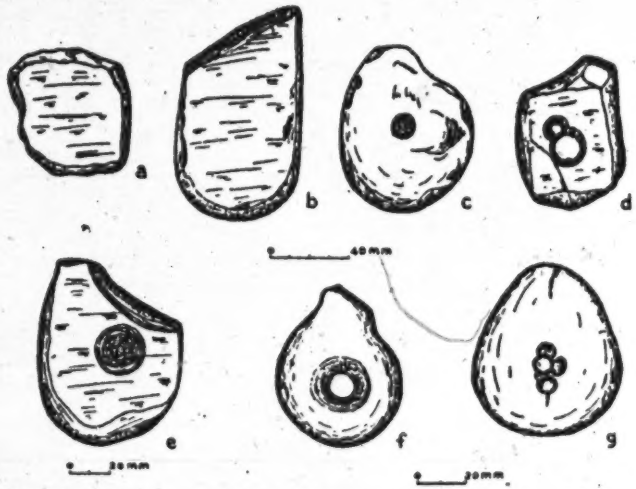

FIGURE 8.—One-piece stone fishhooks in process of manufacture (*a-e*, B3490): *a*, flat piece of stone coarsely chipped at edges into form of hook (72 mm. long, 63 mm. wide, 16 mm. maximum thickness); *b*, stone ground on both faces, sides superficially ground, bottom rim ground to sharp edge on each side (107 mm. long, 67 mm. wide, 17 mm. thick); *c*, slightly polished on both surfaces and edges, hole started on one side (82 mm. long, 70 mm. wide, 17 mm. thick); *d*, edges chipped, central hole drilled through, second hole started (76 mm. long, 54 mm. wide, 14 mm. thick); *e*, well ground on both surfaces and edges, upper slanting edge shows traces of chipping, central hole started (diameter of hole 25 mm., 91 mm. long, 71 mm. wide, 24 mm. thick); *f*, well ground, outline well defined, central hole drilled through (70 mm. long, 60 mm. wide, Trocadero Mus., Paris); *g*, carefully ground, several small holes drilled at center, upper end grooved (70 mm. long, 60 mm. wide, Trocadero Mus.).

Modern stone hooks. The present natives manifest an extraordinary skill in making stone hooks to be sold as curios, but instead of using, as in former days, a fine-grained stone they choose a soft basalt (phonolite or clinker stone) which they carve with metal instruments. In order to give the faked specimens the external appearance of old hooks, the texture of the stone is concealed under a thick layer of black paint. Such precaution is quite recent; the first faked specimens were unvarnished. The workmanship of these curios is remarkable and they might be mistaken for the genuine hooks if they were not thicker and sometimes of an inconvenient form for fishing. 324 439

In the Young collection there are three double hooks made of the same 227 324

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227 324 material as the modern forgeries. One of them has been figured by Beasley (14, pl. 129)[11] as a ceremonial hook. There is no doubt that all these clumsy specimens are faked, but it is a matter of conjecture as to where the natives got the idea for making double hooks. No authentic double hooks are recorded and they were never mentioned as ornaments by the early voyagers. I am inclined to consider them modern products with no ethnological significance.

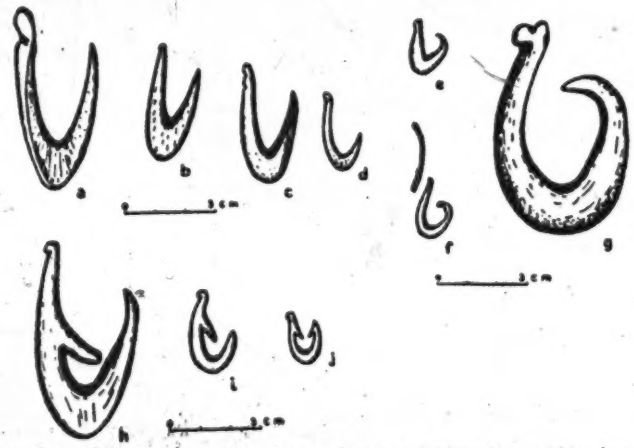

FIGURE 9.—One-piece bone fishhooks. *a-d*, V-shaped hooks with straight points (Trocadero Mus.): *a*, downward-slanting groove under knob, point slightly curved, 60 mm. long; *b*, shank tapering toward small knob, inside edge of bend sharp, 38 mm. long; *c*, knob lacking, snood held by two notches on back of shank, inside of bend shows traces of filing, 40 mm. long; *d*, short point widely diverging from shank, 25 mm. long. *e-g*, hooks with curved points: *e*, 18 mm. long (Trocadero Mus.); *f*, two notches on back of shank hold snood of 3-ply cord wrapped in tapa, 21 mm. long (B3525); *g*, modern hook of beef bone, knob divided like stone hook, point slightly twisted to side, 73 mm. long (B3525). *h-j*, barbed hooks (Trocadero Mus.): *h*, barb on shank almost touching point limb, possibly unfinished, 65 mm. long; *i*, 27 mm. long; *j*, double barb, 16 mm. long.

227 321 **Bone Hooks.** One-piece bone fishhooks (*mangai ivi*; very small ones, *piko*)[12] are found in most of the shore caves used by fishermen as shelters in the old days. These caves were also workshops, as signified by the number of bones and unfinished or broken hooks that may be gathered in them. Formerly the fishhooks were made of human bones, man being the only

[11] Other faked fishhooks have been reproduced by Beasley (14, pls. 91, 179, 181) and Chauvet (45, fig. 69).

[12] Bone hooks from Easter Island are reproduced by Thomson (315, pl. 58, figs. 1, 2); Beasley (14, pls. 88, 92, 95, fig. 21, *a*); and Brown (27, pl. opposite p. 188, fig. 14).

Bone fishhooks are in the U. S. National Museum, Washington, D. C.; the Musée d'ethnographie du Trocadero, Paris; the Museum du Cinquantenaire, Bruxelles; the private collections of Beasley and Fuller, London; and in the collection of Stephan Chauvet, Paris.

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available mammal. According to tradition, the most suitable material was the bone of deceased fishermen (215, p. 537). This preference was of course based on belief in magic. Most specimens in Bishop Museum are of cattle bone, but they are recent and it is uncertain whether they were used or manufactured for trade. Whale bones may have supplied material for some fishhooks, for I know that modern natives have forged "ancient" hooks from the skeleton of a whale which had drifted ashore.

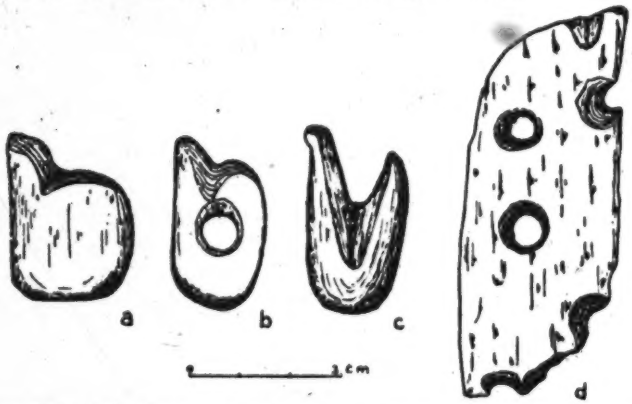

FIGURE 10.—One-piece bone fishhooks in process of manufacture (Trocadero Mus.): *a*, bone grooved at top, slightly smoothed on sides (30 mm. long, 25 mm. wide); *b*, material between shank and point limb removed by drilling (33 mm. long, 19 mm. wide); *c*, V-shaped hook made by notching upper edge of bone plate (38 mm. long, 18 mm. wide); *d*, piece of bone with drilled holes, probably intended for making hooks.

The method followed in making bone fishhooks (fig. 10) was like that for manufacturing stone hooks. Collections I made included samples of various stages in the manufacture of bone hooks from rough fragments of tibia with traces of cutting to the semi-ground specimens.

The general outline of the fishhook is cut in a piece of bone and then the interior is drilled out or notched. The final touch is given by grinding and by filing the edges. Short obsidian points (p. 166) may have been used on the drills. These points could not be handled without some sort of shaft, and their shape and size resemble the quarts or flint pieces attached to the spindle of Maori drills (100, p. 25).

The one-piece bone fishhooks present little variation in form, most of them being more or less V-shaped. The only features on which a classification can be established are the presence or absence of a barb and the form of the point which is straight or curved backward. A few one-piece bone hooks are circular.

The V-shaped hooks with straight point might have been formed by notching a piece of bone or by both drilling and notching. Hooks with a curved point were evidently drilled and then shaped.

Several fishhooks collected by me on Easter Island are barbed. The barb projects downward from the inner side of the shank. In one specimen (fig. 9, *j*) both shank and point are barbed.

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The shank ends in a backward-projecting knob which prevents the snood from sliding off. In a few specimens the end of the shank is sharp, the knob small and inconspicuous. Small notches on the back of the shank, under the knob, help secure the snood, especially when the knob is small or missing.

The one-piece fishhooks are usually small; I obtained some specimens only 17 mm. long. The largest one-piece fishhooks picked up in caves are rarely more than 80 mm. long; most of them are about 60 mm. long (fig. 9, *a*). Modern specimens, which are numerous in Bishop Museum collections, are longer and thicker (fig. 9, *g*).

Composite Hooks

Parts of composite hooks (*mangai verevere*) are frequently found by the natives in old caves (fig. 11, *d-e*). After a few days on Easter Island I had made a fairly good collection of shanks (*reke*) and points (*kainga*), but it was less easy to obtain a complete composite hook.

In the Bishop Museum there are two complete composite hooks. The larger (fig. 11, *a*) has an ancient, finely made, stone point attached to a modern wooden shank by stout cotton thread. The shape and proportions of shank are probably correct, as well as the method of binding. The proximal end of the shank is shaped like the corresponding part in the one-piece stone hook. The distal end has a groove at the back corresponding to the groove on the front of the stone point. Composite hooks of stone must have been rare; I know of only one and have been able to discover no fragment of stone which could be considered an element of a composite hook. Nevertheless there is no doubt as to the genuineness of the specimen. The smaller composite hook (fig. 11, *b*) has both shank and point of bone. The point is made of the human tibia, the shank suggests the human femur. The fine cord binding point to shank is of local manufacture. The lashing is too tight to be genuine, but it must have been somewhat similar in the old specimens. The string was wound first transversely, then vertically, again transversely, and once more vertically. The lashing conceals entirely the juncture of shank and point. The point base is wider than the limb; its inner edge is slanting and fits into a groove in the base of the shank. The distal end of the point base protrudes in a knob which facilitates the lashing. The distal end of the shank has a recess or a groove and sometimes a knob corresponding to the knob at the proximal end. The broken shank of a composite hook I found in a cave has a projecting barb similar to those of barbed single-piece hooks (fig. 9, *h-j*).

The composite fishhooks of the Fuller collection, reconstructed by the natives (14, pl. 93), bear hackles of horsehair. On other Polynesian islands, tufts of hair, representing the tail or fin of a fish, are added to the hooks to give more efficiency to the lure. If the device was not traditional in Easter Island, it may have resulted from contact with Tahitians. Charli Teao, the best fisherman on the island, told me that formerly the shank and the point were lashed with women's hair. His statement may be based on a vague reminiscence of the presence of a hackle of hair.

The lashing on a composite fishhook in the British Museum is covered with a piece of tapa. The lashing at the base of the hook in a specimen owned by Beasley (14, pl. 95) is made of strips of the outer bark of some plant.

Comparisons with other Polynesian Fishhooks

Bone and stone were apparently the only materials used for fishhooks on Easter Island. A wooden fishhook of *toro-miro* wood was made for me, but

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it is so like the ordinary bone hooks that I consider it simply an imitation without ethnological significance. There is no indication of wooden hooks though they may have been known. Simple, one-piece, curved hooks are universal in eastern and central Polynesia and are so similar that significant differences can be noticed only in secondary features. With a few exceptions, Easter Island simple hooks are barbless. When the barb is present, it projects from the inner side of the shank. Only one hook in my collection has a barb on the point (fig. 9, *j*). A New Zealand hook of similar type is figured by Beasley (14, pl. 13). In other New Zealand bone hooks, the head of the shank has a projection cut almost as sharply as the ordinary barb of the point. The jade hooks (*hei matau*) of New Zealand are mere ornaments and cannot be compared to hooks that were actually used.

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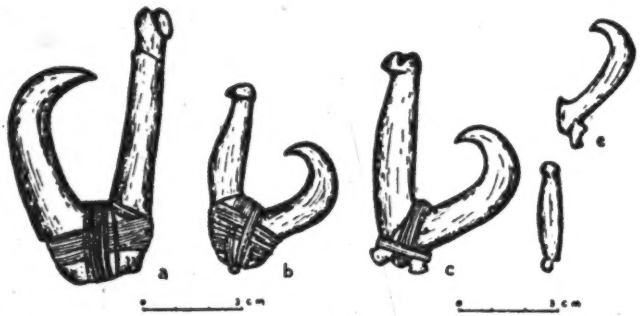

FIGURE 11.—Composite fishhooks (*a-b*, B3531; *c-e*, Trocadero Mus.): *a*, modern wood shank, stone point, point 65 mm. long, 12 mm. thick, recess on lower part of point 10 mm. wide; *b*, bone hook, longitudinal groove on top of knob, modern lashing of 2-ply *hau* bark thread, shank at bulge 11 mm. thick, total length of hook 50 mm., point markedly curved backward, point 7 mm. thick; *c*, bone hook, projecting knobs on distal end of shank and on point base give concave base to hook which must have allowed tighter lashing, modern lashing, total length of hook 56 mm., maximum width of point 10 mm.; *d*, bone shank limb of fusiform shape, 33 mm. long, 11 mm. thick at bulge; *e*, bone point, base flat with sharp edge, 40 mm. long.

Easter Island stone fishhooks have no parallel in other parts of Polynesia, with the possible exception of Pitcairn Island. A stone hook, in the Otago Museum (D.34.1006), New Zealand, is said to have been found on Pitcairn, though no other stone fishhook or fragment has been reported there. This hook is so like modern stone hooks from Easter Island that some doubt exists as to its origin.

The shape of the upper part of the shank of Easter Island hooks is determined by the lashing of the snood and is found on many broad hooks, especially those from Hawaii. The same feature appears in Moriori (206,

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227 171 p. 82) and Maori fishhooks. The Mangarevan shanks have the same outline though the back projection is more accentuated than those from Easter Island.

Though Polynesian bonito hooks, like Easter Island composite hooks, are made of two pieces lashed together, they have no other character in common. The Easter Island composite hooks fulfilled the need for larger hooks better than the one-piece bone hooks, and their manufacture was no doubt easier than the painstaking drilling of bone plates.

The composite hooks of Easter Island may be divided into two classes: those with straight, cylindrical shanks and those with shanks slightly convex on the outer side. The straight shank has some similarity to two New Zealand composite hooks of moa bone figured by Beasley (14, pl. 11), but the New Zealand hooks have a projection near the top which is lacking in the Easter Island hooks. The slightly convex shank is like a Hawaiian type (14, p. 50). The broken shank of an Easter Island composite hook has a projecting barb on the inner side, a feature of the Hawaiian composite hook.

The point bases in Easter Island and Hawaiian hooks have exactly the same peculiar downward projection and are fitted in the same way (fig. 11, *c*). The methods of lashing are strikingly similar. The New Zealand composite hooks were provided with hackles like the Easter Island ones.

LASHING OF SNOOD

227 Many of the old hooks in public or private collections are provided with a snood (*kavei*). It is difficult to tell whether these snoods are really of old native make, but they probably represent an ancient method.

Small fishhooks examined by Dr. P. H. Buck in the Museum für Völkerkunde, Vienna (22821-22824), have a lashing of simple transverse turns with a couple of half hitches. Chauvet (45, fig. 73) figures a very old composite bone fishhook from Easter Island, the snood of which seems to be wrapped by a strip of bark of the same kind as that on the hook described by Beasley (14, pl. 95, p. 57). The snoods of the two small fishhooks (*piko*) in the Bishop Museum collection are wrapped with a very fine strip of what seems to be tapa cloth or paper mulberry bark.

LINE AND ROD

226 227 283 Fishline (*hau*) was made of *hau* (*Triumfetta semitriloba*) bark. Poles are used now for fishing on shore and were known in olden times, to judge from the term in Roussel's vocabulary, *ika kohau* (to fish with a line: *kohau*, stick or pole).

BAIT

226 To catch tuna (*kahi*), small *ature* fish were used as bait (*mounu*). The *ature*, which is the size of a sardine, was probably split and fixed to the hook

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(*hakaanagaou*) lest the tuna tear it off. *Ature* were sometimes crushed between two stones and the flesh (*mamama*) wrapped (*viri*) with the line on the stone sinker. The hook was cast into the water with the stone and the line was fastened in such a way that a jerk was sufficient to release the stone. The crushed meat, wrapped with the stone, floated near the hook. 226

Sometimes two hooks were thrown at one time—a big one baited with crushed *ature* meat and a small one with a whole *ature*. The line with the small hook (*hau-maroki*) was fastened to the belt of the fisherman, and the one with the big hook (*hau mamama*) to a transverse stick in the canoe. The loose knot untied at the first bite (*pakoo*) of the fish. The fisherman allowed the line to go out before he pulled (*paipai*) in the fish.

To catch *pei* or *poopoo*, big fish living in deeper water than the *kahi*, the natives used long lines which they sank with a heavy stone. *Ature* was the usual bait. For some fish the natives attached several hooks to one line, spaced about one meter apart. Geiseler (87, p. 37) mentions the use of fragments of mother-of-pearl to attract the fish, but I obtained no information on this point. As bonito hooks were not used on Easter Island, mother-of-pearl could well have been used for a lure. Even today when metal hooks have taken the place of lighter bone ones, the islanders still use stone to sink their hooks.

Crushed crayfish is considered a good bait for *tuamingo* and some other fish.

CONGER FISHING

Conger eels (*koiro*) are caught with a hook baited with *kotea* or *paoho* fish. Near Anakena is a rock which is said to have been put there by Hotumatua for the fishing of conger eels. I was told that some fishermen caught congers by diving and seizing them with the hands. [481]

NETS

I saw no net in the modern village of Hanga-roa. However, one was used in a fishing party in which one of our group participated. Fifty years ago nets were abundant and Geiseler (87, p. 37) admired their beautiful workmanship. Even the large nets had fine, regular meshes. To catch fish with a net is *tangu*. The expression *tono ki roto ki te kupenga* means to drive fish into a net. *Tuku* is to scoop with a hand net, to walk with open net. The corners of a net are termed *pingei*; the bottom, *taki*; the meshes, *piniku*. 227

The 2-ply cords for nets were made of *hau* bark (*Triumfetta semitriloba*) or of paper mulberry bark twisted by women on their thighs. Nets in the Museum für Völkerkunde, Berlin, are made of clear yellow rope very like the *olona* string of Hawaii. 227 286

The making of nets (*taa*) was a male industry in which even the king took part. The netting shuttles (*hika*) were made of *toro-miro*. A modern shuttle was made for

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227 286 me from a stick about 30 cm. long. Both ends are slightly thicker than the middle, and the extremities have narrow, longitudinal slots. Two shuttles collected by Thomson (fig. 12, *a*) do not have expanded ends. The cord was wound longitudinally between the two split ends. Nets with very small meshes, for catching small *ature* fish or small crustaceans (*koura*), were made with bone needles similar to those used in sewing tapa. Figure 12, *c* shows the knot technique of a net.

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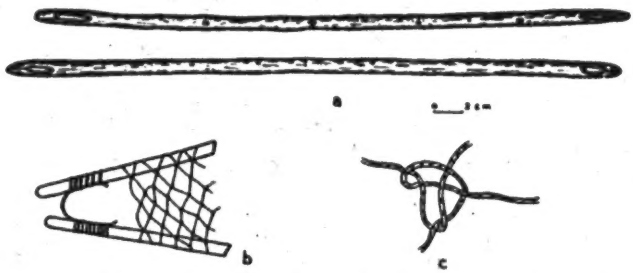

[284]

FIGURE 12.—Fishnets: *a*, wooden netting needles (*hika*) 450 mm. long (U. S. Nat. Mus., 129738); *b*, method of lashing together ends of two poles of dip net (pl. 2, *A*); *c*, knot used in making fishnets (after a drawing by Dr. H. Nevermann, Mus. f. Völkerkunde, Berlin, VI.4963).

The first netmaker was the ariki Tuu-ko-ihu, the great inventor and expert. Names of some of the experts succeeding Tuu-ko-ihu have been preserved, most famous of whom were Poie, Te Ngaru, and Aru-manu-vie, who died not long ago. I was told that there are no good netmakers now.

DIP NETS

227 A handled dip net (*kupenga puhi*) had a frame consisting of a rod bent like a bow and fixed to the end of a handle about 1.5 meters long. The net was attached to the bent rod and to the handle. The *kupenga puhi* was a scoop for shore fish.

The *kupenga hakatoro* was made like the *kupenga puhi* but was much smaller. It was used to catch small fish along the coast, especially after a storm when fish were driven to shore, and to catch fish among the rocks, principally at a place called Puhinga. Eels and lobsters were captured in *kupenga hakatoro*. I suppose that Palmer (171, p. 174) has this kind of net in mind when he speaks of Easter Island nets " . . . which were made with small (half inch) meshes, and from their sizes used for the small fry."

A complete double-handled dip net was collected by Geiseler (pl. 2, *A*). There is some confusion among the natives about the name of this net. It was mentioned to Brown (27, p. 188) and to me as *kupenga tuku* or *tukutuku*, but the same term was applied to a set net with two lateral poles. Evidently the word *tuku* (pole) has come to designate any kind of net attached to poles.

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The double-handled dip net is a rectangular bag whose mouth is attached along two poles tied together loosely at one end by a thick string which is fixed round one pole and its free end caught under a tight lashing on the other pole (fig. 12, *b*). Geiseler (87, p. 49) says that these nets were used along the shore. This type is similar to the Samoan hand net called *'upenga saosao'o* (34, p. 476) which was set across a channel or pool with one pole resting on the bottom and the other held up to open the net. The fisherman stood near the hinge while another man drove the fish into the net with a stick. The form of the Easter Island net suggests the same method. 227

Another net purchased by Geiseler consists only of a rectangular bag without a frame (Mus. f. Völkerkunde, Berlin, VI 4963). The mouth of this net is 130 cm. long, the bottom 150 cm. long, and the depth 80 cm. The proportions and form of the bag correspond to those of the nets described above.

BAG NETS

No bag nets are in present use on the island. However, they were minutely described by my informants, and one specimen was collected by Geiseler. The net consisted of a bag with or without pouches on both sides, a wooden hoop, suspension lines, and sinkers. The different kinds of bag nets varied only in size and were named after the fish for which they were intended.

The *kupenga ature* were the largest nets. My informant estimated their depth at 3 meters, the diameter of the opening at 5 meters. The bottom was straight, and no reference was made to pouches. The mouth was attached to a wide, circular hoop made of twelve (?) rods of *marikuru* (*Sapindus saponaria*) wood bent over fire. Stone sinkers (*maea rengorengo*) enclosed in small nets were fastened to the bottom. This type of net is undoubtedly the same as the one referred to by Knoche (123, p. 186) as " . . . net two meters long, in the form of a bag tapering at the end, with a stone sinker. It is handled by two men. At the lower end of the net a crushed crab is put as bait and the net is immersed at depths over 150 feet." Geiseler (87, p. 37) mentions some bag nets which were 30 feet long.

The *ature* caught in the *kupenga ature* net are small fish which were the usual bait for big tuna. The *kupenga ature* were baited with small crustaceans which the islanders call sea fleas (*koura*). The following method was used to catch *koura*. Bunches of seaweed (*rimu*) were left in "pot holes", which are numerous in rocks along shore, for a day or more to attract sea fleas, then strained through a net (*kupenga ruru rimu*) with very small meshes. The crustaceans passed through the meshes and were gathered into a small basket (*kete rauhiri rimu*). The basket was wrapped around with a long rope and was attached to bait lines above the hoop of the *kupenga ature*. When it was submerged, the basket was unwrapped with a jerk of the rope, and the crustaceans scattered about the net. The fishermen drove the *ature* into the net. 226

The *kupenga koreva* was made on the same principle as the *kupenga ature* but was smaller. This is evidenced by the fact that only three suspension lines were tied to the hoop. The *koreva* were described to me as small fish that can be eaten raw and which were caught at the same time as the tuna. 227

The *kupenga ura* was used to catch crayfish in shallow water near shore. A crayfish net of Easter Island is preserved in the Museum für Völkerkunde, Berlin (VI.4960). The circular hoop is made of wire and is 16 cm. in diameter. The net is a round bag with meshes 1¼ cm. wide. It is 29 cm. deep and widens considerably toward the bottom, which is 50 cm. wide. It is made of 2-ply cord (probably *hau* fiber) of brownish gray color. There is a lead sinker lying unattached on the bottom.

Curiously enough, *kupenga ura* was the name given to me for a variety of bag net for catching *korea*, a fish said to have been reserved for the king. These fish swarm near the coast and are easily netted from the shore. The net, as described by the natives, was like the ordinary bag nets already described. The bottom was provided with two extended corners or pouches, and the sinker was attached between the corners at the

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227 end of a rope. The average dimensions of the net were 1½ feet deep and about 1 foot wide.

A net without frame in the Museum für Völkerkunde, Berlin (VI.4965) seems to be a bag net. It is 160 cm. deep, 146 cm. wide at the mouth, and 196 cm. wide at the bottom. The meshes are unusually wide (4 cm.). The catalog states that this net was used on the open sea, which is contrary to the customary use of the dip net.

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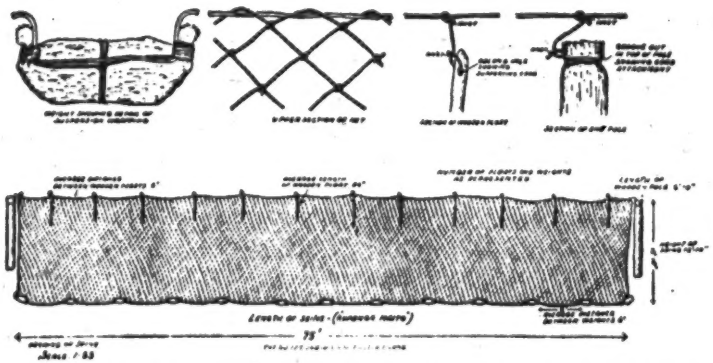

FIGURE 12A.—Seine net (*kupenga maito*) collected by Thomson in 1886 (Nat. Mus. Washington, 129748).

SET NETS AND SEINES

227 The *kupenga tuku* or *tukurua* net was used at night in coves. It is said to have been 10 meters long. It was attached to two poles and was carried to the water by six men, three on each side. The poles were set up in the sand, and the shoal of fish was driven into the net, which had considerable bag.

[71] From this description it appears that the ancient *kupenga tuku* of Easter Island was identical with the present *tuturua* net of the Cook Islands (33, p. 294), where the name means "net with two poles (*tutu*)." This is probably the real significance of the term *tuturua*, though today the word designates a net without poles.

The modern *kupenga tukurua* of Easter Island has no poles, measures 4 to 5 meters long, and has meshes about 2 or 3 cm. wide. A string runs along the upper and the lower edges. Natives use this net to fish in coves along the shore. Two men carry the net, one on each side, and walk in the water slowly and quietly until they are near a shoal of fish—usually *kotote*, a fish about 15 cm. long. As they near the fish, one of the men throws a stone beyond the fish to drive them toward the net. Then one man lifts the lower edge of the net to meet the upper, thus imprisoning the fish. This type of net might have been named after the ancient *kupenga tukurua* with two poles.

In the Cook Islands *maito* fish are caught with the *kupenga tuturua*; on Easter Island they were caught with a special net called *kupenga maito*, which was similar to the *kupenga tuku* or *tukurua*, but was provided with floats and sinkers. A specimen of *kupenga maito* was procured by Thomson in 1886 and is preserved in the U. S. National Museum in Washington, where I examined it (fig. 12A). The netting is made of paper mulberry fibers twisted into a thin string. The knots forming the meshes (3 to 4 inches wide) belong to the type known as "weaver knot", common in Polynesia (fig. 12, *c*). The

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net is 75 feet long and 12 feet 10 inches broad. It is tied at each end to the top of a pole, probably of *hau* wood (*Triumfetta semitriloba*) 6 feet 10 inches long. A strong cord of hemp, probably of European manufacture, extends along the edges of the net. To this cord at the upper edge of the net are fastened 12 floats (*uto*) of *hau* wood 24 inches long. These are attached approximately every 6 feet to the suspension rope by strings tied through holes in the upper ends of the floats. The middle float was called *pito-o-te-kupenga* (the-navel-of-the-net). The lower edge of the net is weighted by 13 stones wrapped in banana tree bark and tied to the edging cord. These sinkers (*kaka*) weigh 196 grams and have an average length of 5 feet. When a shoal of fish was sighted, the two poles were stuck in the sand and the fish were driven toward the net.

Geiseler (87, p. 37) mentions a net 200 feet long but this is probably exaggerated.

The *kupenga viri* (*viri*, to roll) was identical to the *kupenga maito* and was generally used at night.

The *kupenga matiro* had smaller meshes than those of the *kupenga maito* but the principle of the net was the same. It was used to catch *matiro*, a leaping fish.

The *kupenga ihe* was used to catch *ihe* (needle fish). It was the same type as the *kupenga maito* but was larger and had smaller meshes. It was carried to its place by several swimmers.

CASTING NETS

Though casting nets were not enumerated by my informants, they were seen by Thomson (215, p. 460): "Their light casting nets were used with great dexterity as they waded along the beach, and when a shoal of small fish appeared, the net was thrown with the right hand."

TURTLE NETS

For a great many years no turtles (*honu, kepukepu*) have been seen off the shores of Easter Island. The natives explain their disappearance by the passing of the kings (p. 133). Island folklore has many stories about turtles, and numerous petroglyphs represent them. Turtle shells which were worn as ornaments have been found in caves and graves.

My informant says that when turtles were seen, natives jumped into their canoes and went to meet them. They dived near the turtles and drove them into a special net (*kupenga honu*), similar to the *kupenga matiro* but with wider meshes and stronger ropes.

SINKERS

Twelve net sinkers are preserved in the Bishop Museum collection. Four have an artificial perforation, and the others are basalt rocks with a natural hole (fig. 13, *a*).

Of the four stones intentionally perforated, two are nearly flat with holes near one edge like the net weights of Tahiti (fig. 13, *c*). The remaining two belong to a widespread Polynesian type which, in its most characteristic form, is a sphere with a perforated projection at the top. In the same collection, a stone disc with a central hole (B2614) may well have been a sinker.

Three small oval stones weighing about ½ ounce each (fig. 13, *c-d*) are grooved for attachment of a cord. They are labeled in Young's catalog as "*atua mangaro*, fetish stones used by *tulunga* (sorcerers)." The natives identified them as ear pendants to increase their commercial value; they emphatically denied my suggestion that the

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227 324 stones might have been line sinkers. However, the frequency with which such pieces are discovered in fishermen's caves along the shore suggests that they had something to do with fishing, either as line sinkers or net sinkers. The lightness of these stone sinkers cannot be regarded as a serious argument against their practical use.

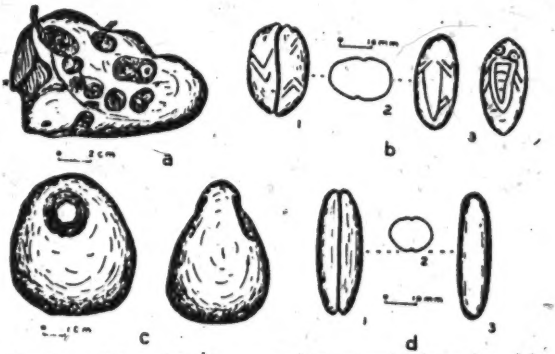

FIGURE 13.—Stone fishnet sinkers: *a*, stone with natural hole used as sinker, 141 mm. long, weight 33 oz. (B3513); *b*, small stone sinker for net or line: 1, lateral view; 2, cross section, 3, front and back views showing incised animal figure, probably a fish or a lizard, 28 mm. long, 20 mm. wide, weight 2/3 oz. (B3557); *c*, biconical hole perforated near top, coarse-grained basalt, 70 mm. high, greatest width 61 mm., 51 mm. thick, weight 10 oz. (B3564); *d*, small stone sinker for net or line: 1, lateral view; 2, cross section; 3, front view, 38 mm. long, 14 mm. wide, weight 1/2 oz. (B3557).

COMPARISON WITH OTHER POLYNESIAN FISHNETS

227 171 A comparative analysis of Easter Island nets is almost impossible. With few exceptions they are known only through second-hand descriptions. Also the types of nets have been studied in only a few Polynesian islands, and many of the descriptions are too general to be utilized for comparative purposes.

Scoop nets are general in Polynesia, but nowhere did I find reference to the bow-shaped frame of Easter Island.

Bag nets were used in New Zealand for catching crayfish, and, as on Easter Island, the bait was attached above the hoop. Grooved stones were used as sinkers on these Maori nets. The sinkers were sometimes enclosed in a small net to prevent their being lost. The large bag nets of Easter Island (*kupenga ature* or *koreva*) probably resembled the Maori bag nets for catching *maomao* (32, pp. 626-634). Bag nets have been described for the Marquesas (142, p. 400), the Society Islands (103, p. 88), Manihiki and Rakahanga (29, p. 163), and Tongareva (30, p. 201). In the Bishop Museum collection there is a large bag net from Hawaii which suggests Easter Island *kupenga ature* nets.

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To catch needle fish (*ihe*) the Marquesans had a special net of the same type as that used for flying fish. It was a small bag fixed to the arms of a fork lashed to a pole (142, p. 400). It is possible that the description of the *kupenga ihe* given by my informant is inaccurate and that the Easter Island *kupenga ihe* was like the Marquesan. However, in the Tuamotus the needle fish are caught in traps, hence we may assume that set nets could be used for the same purpose.

Fish Spears

Spears used by modern natives are of European manufacture. It is impossible to determine whether a spear is old or has been introduced by Tahitian settlers. When Roussel (190, p. 355) landed on Easter Island in 1866, some of the natives were armed with European harpoons. Modern spears are from 3 to 5 meters long and belong to two types, one a simple spear with an iron point, the other with a compound point working on the principle of a fish gorge. The fisherman dives, his eyes protected by glasses, and pierces fish that swim within his reach.

Turtle Watchtowers

Turtles were watched for from turtle watchtowers (*tupa*) along the shore near ancient settlements.

One tower at La Pérouse Bay (pl. 2, *B*) is 3 meters high and the diameter of its base is about 7 meters. The entrance is 80 cm. high and 1.10 meters broad. The interior of the building consists of big, unhewn stones, well laid. Inside they project gradually until they are spanned by slabs forming a crude corbeled vault. The largest tower is situated between La Pérouse and ahu Mahatua, near ahu Vai-mangeo. The tower has a kind of wing containing an inner chamber.

The *tupa* of ahu Akapu, seen by Cook and his party (83, vol. 1, p. 570) and accurately described by Bernizet (130, vol. 2, p. 254), is still in fairly good condition. Its construction is similar to that of the tower at La Pérouse. The interior chamber is 24 feet long by 6 feet wide and 7 feet high in the center. The walls are 4 feet thick and the door is 2 feet high by 2 feet wide.

Thomson (215, p. 484) and Routledge (194, p. 218) were told that these towers were lookout stations whence the movements of turtles and fish could be watched, and I was given the same explanation. Skottsberg (208, vol. 1, p. 12) was puzzled by the importance of the towers with their lower apartments, which are in no reasonable proportion to the purpose for which they were built. Though they are along the shore, these towers do not give the watchers any better view of the sea than any near-by hill. There are no such towers on the south coast; on the north they are few—I know of only five. In the Tuamotus and Hawaii, watchers sat at certain points along the coast to signal the arrival of turtles or fish. Heaps of stones served as elevations. The *tupa* of Easter Island were probably most similar to the Hawaiian fishermen's shrines (*ko'a*), which were terraces of stone. On some of them stood

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225 a house where the priest slept in order to learn the issue of a projected fishing party or to have revealed by a god the presence of a shoal of fish.

349 There is nothing in the *tupa* to facilitate access to the top of the tower, which is not a very comfortable place. The vaulted chamber inside suggests no practical purpose, since a cave or shelter would have been quite sufficient for the watchers, whose homes stood near the tower. Turtles were not, even then, common on Easter Island, where the climate is too cold for them and where there are only a few sandy beaches.

Eel Snaring

226 To catch eels (*koreha-puhi, koreha-tapatea, koreha-haoko, koreha-toko-*
327 *ari, koreha-mingo, koreha-ruma*), the natives use a snare (*here-koreha*) made of two sticks, generally 50 or 60 cm. long.

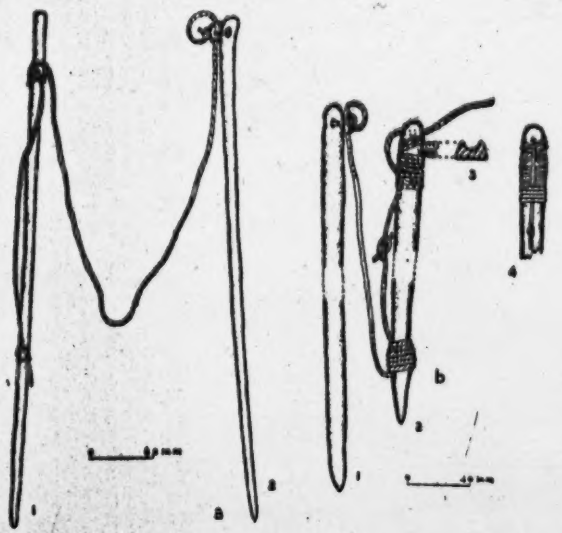

Figure 14.—Eel snares. *a*, snare collected by Geiseler in 1884 (Mus. f. Völkerkunde, Berlin, VI.4922): 1, bait stick 622 mm. long; 2, stick with noose 640 mm. long; *b*, ancient snare (Mus. f. Völkerkunde, Berlin, VI.4880): 1, stick with noose 245 mm. long; 2, bait stick 310 mm. long; 3, black stone; 4, lateral view of bait stick.

The thicker end of one of the sticks is perforated and a cord passes through the hole and is tied to the stick with a knot. The cord then passes between the knot and the stick to form a noose and the end of the cord is tied to the other stick (fig. 14). Bait is attached to the second stick while the one with the loop remains in the water perfectly still. The eels are caught along the shore. When an eel is attracted by the bait, the fisherman pushes the stick with the noose toward it so that to reach the bait the eel

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has to pass its head through the noose. The noose is closed by pulling the string which the fisherman holds in the same hand as the baited stick. 226

One such snare (fig. 14, *b*) in the Museum für Völkerkunde, Berlin, (VI.4880) is much more elaborate than the present-day specimen. The bait stick is provided at its thicker end with a notched stone, the function of which is not clear; the rope is first tied around the thinner end, then runs along the stick, and is caught in the lashing and passes through a hole. The free end of the rope is used to tie the bait to the stick. 227

Eel snares of the same type as those of Easter Island were used in Rapa (212). In the Marquesas the snare consisted of one stick, which was held in one hand while the string was held in the other (404, p. 177). The eel snare is widespread in the Tuamotus and probably in the Society Islands, though it is not mentioned by Handy (103). In Samoa the eel snare is practically identical to that of Easter Island (34, p. 421). 227 171

Fishing by Hand

Octopus

Octopuses (*heke-puka*, octopus with short legs; *heke-korotea*, octopus with long legs) are caught with bare hands (*hakapari*) along the shore by moonlight. The fisherman bites the head of the octopus to kill it. Tradition states that formerly the natives built *hare heke*, houses where the octopuses sought shelter. They were driven into these shelters by magic. 226

Crayfish

Crayfish (*ura*, *ura raperape*) were formerly caught in a bag net, but that method has been discarded; now they are captured by hand either by day or by night. The fisherman dives (*ruku*) where he knows there are recesses or small caves. He seizes the crayfish by the body (*ipu*). At night crayfish are caught by the light of torches (*tuu ahi*) made with a rag soaked in sheep fat and fixed to the end of a stick. Formerly the natives used torches made of banana bark impregnated with fish fat. Fishing with torches is called *ika puhi*. Crayfish hunters always go by twos. The man holding the torch puts his foot on the crayfish, attracted by the light, and his companion picks it up and puts it into a bag. The most favorable time for catching crayfish is when the wind is new (*tokerau hoou*), that is, when the wind turns and pushes the crayfish toward the shore. At Puhinga on the south coast crayfish are especially abundant.

Reef Fishing

Reef fishing (*hahari*) and the gathering of shellfish were important activities of women in olden days. The women used small spears called *ruruki* for some kinds of fish or to remove shells from the rocks. Fish caught thus by women were *paroko*, *patuki*, *tuamingo*, *rae-mea*, and *mahaki*. Crabs were not despised then as they are today. The natives distinguished between the kinds [227] [262]

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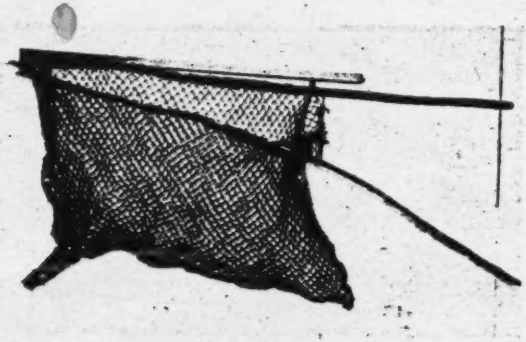

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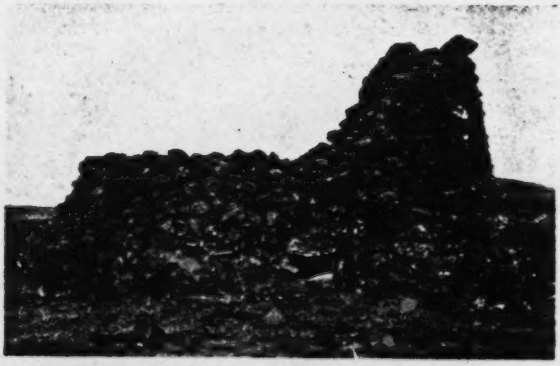

B

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C

A, DOUBLE-HANDLED DIP NET, BAG 76 CM. DEEP, 140 CM. LONG, MESHES 2 CM. WIDE, POLES 149 AND 161 CM. LONG (MUS. F. VOLKERKUNDE, BERLIN, VI.4962); *B*, TURTLE WATCHTOWER (TUPA) NEAR LA PEROUSE; *C*, REED MAT (MUS. F. VOLKERKUNDE, BERLIN, VI.4970).

[End plate II]

7: Anonymous T-5 (1770)1908
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It need not be said that the islanders were terrified at the noise of the gunfire and musketry: that must happen to people who have not used or seen such inventions.

The women made use of wraps or cloaks: one which covers them from the waist downwards, and another about the breasts. There are others also who wear only a rag or strip of some root, which they place in front like the men. They have several very low and small huts, and some like the one first mentioned.

Throughout the island, but especially near the sea-beach, there are certain huge blocks of stone in the form of the human figure. They are some twelve yards in height, and I think they are their idols. They could not bear to see us smoke cigars: they begged our sailors to extinguish them and they did so. I asked one of them the reason, and he made signs that the smoke went upwards; but I do not know what this meant or what he wished to say.

I fancy that the cloaks or wraps of the said islanders are made from the fibres of stems of the banana plant, which, when dry, they put together as may suit their purpose[1]: it is not woven, but is joined together by strands of the same material which they thread on bone needles of the size of a cloak-maker's needle. They make fishing-lines of this same fibre, as well as nets after the fashion of our small nets; but of little strength.

They have very little wood; but if they were to plant trees there would be no lack of it; and I believe that even

[1] The material was really the white inner bark of the paper mulberry tree (*Broussonettia papyrifera*); and the thread used for attaching the segments together was probably made from the *Hibiscus tiliaceus* bark. A Spanish naval officer may well be excused for falling into this error, as the employment of the fibre of *Musa textilis*, known to him as *abacá* and to ourselves as 'Manila hemp,' would doubtless have come under his observation in the Philippine Islands; and perhaps his running rigging may have been made of it even in those days.